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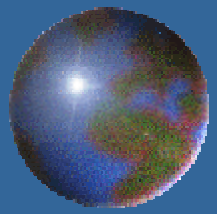
U.S. Environmental Protection Agency



Symposium on Cost Effective Analysis for Multiple Benefits

The Air Quality Concept

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September 9, 2003

Washington, D.C.

Purpose of Presentation

Provide an overview of how federal air quality requirements are transferred into state and local air quality programs including:

- NAAQS and SIP Process
- Rulemaking Process
- Emissions Inventories
- Non-Fiscal Regulatory Decision Criteria
- Multi-pollutant Cost-benefit Analysis in the Northwest

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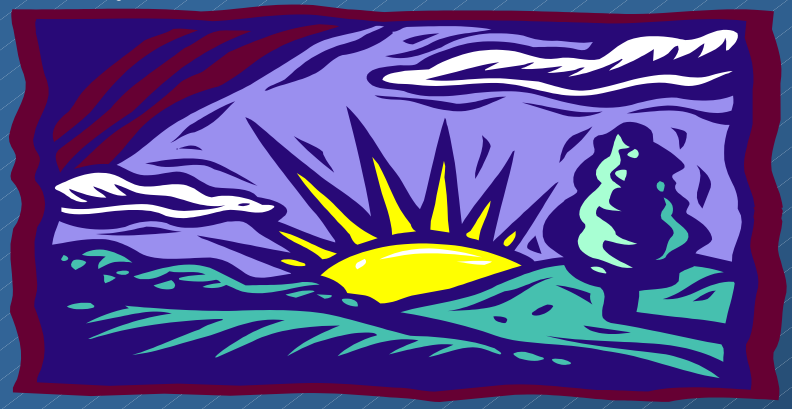
Air Pollutants and Issues of Concern

- Criteria pollutants and precursors
- Toxics
- Visibility
- Acid deposition
- Greenhouse gases



Pollutants and issues of concern vary dramatically from region to region and through time. The structure of the Clean Air Act and funding processes encourage single pollutant and issue planning efforts.

SIP Process - NAAQS

- National Ambient Air Quality Standards (NAAQS) Required by Clean Air Act
- NAAQS promulgated by EPA by means of arduous political and technical process
- NAAQS for Ozone, CO, NO_2, SO_2 Lead, & PM
- NAAQS set to protect the most vulnerable members of society, usually children, the elderly, and people with underlying health problems
- Standards are based on scientific health science
- Cost considerations apply in setting schedules and strategies to attain NAAQS

NAAQS & SIP Process (continued)

- NAAQS applicable nationwide
- Some jurisdictions have additional state and local standards that may be stricter and include additional pollutants
- Based on monitored quality-assured values
- Monitoring equipment and methodology subject to federal specifications, but operated by state and local governments
- Modeling and emissions inventories used to demonstrate adequacy of plans

SIP Process – NAAQS Violations & SIPs

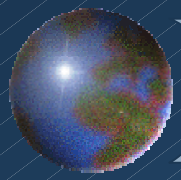
- NAAQS violation measured and quality assured
- EPA issues "SIP call" or letter to governor of the state that officially starts SIP "clocks"
- States are required to submit SIP revisions to EPA demonstrating technically that the control strategies chosen will bring the area back into compliance

SIP Process – NAAQS Violations & SIPs

- SIP regulations must be scientifically sound, permanent, funded, and enforceable.
- Changes in compliance status trigger an array of mandatory regulations.
- States and locals can include regulations that make sense for their jurisdictions.
- SIP preparation is a technically, administratively, and politically. complicated process.

NAAQS Compliance - looking ahead

- State and local air agencies keep a close watch on their attainment status.
- Most regularly prepare projections to predict possible NAAQS violations and work proactively to prevent NAAQS violations.
- Preventative measures may be mandatory rules, but are often achieved by means of voluntary efforts and incentives.



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Impetus for Promulgation and Revision of State and Local Air Quality Rules

- Explicitly Required by Clean Air Act (I/M)
- Compliance with federal performance standards
- Required by related rule (Energy Policy Act)
- Mandated or authorized by state or local legislative body
- Citizen initiatives or political pressure
- Efficiency improvements and changing needs

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Rulemaking process:

Preliminary Steps

- Need for rule arises
- Agency deliberates internally about schedule and best approaches
- Stakeholder process is highly desirable, but usually optional
- Stakeholders often present cost/benefit data pertinent to their situation

Even if a regulation is specifically mandated by federal law, state and local agencies must also have authority from their legislative bodies to implement the program.

Rulemaking Process: (continued)

Formal State/local Process

- Legislative board authorizes rulemaking
- Public notices, hearings, and comment periods
- Comment review and response by agency
- Adoption of final rule by legislative board
- Documentation and recordkeeping
- Notice published in rules publication similar to Federal Register

Rulemaking Process: (continued)

Incorporation in the SIP

- State and local air quality rules may or may not be part of the SIP.
- Governor submits rule to EPA for inclusion in SIP.
- EPA incorporates rules into SIP for the state.
- Rules included in SIP are federally enforceable, which has serious implications for both the agency and the regulated sources regulated.
- Some jurisdictions include all of their rules in the SIP, others only the minimum required by federal law.

Emissions Inventories

- Emissions Inventories are the backbone of air quality planning
- Multi-pollutant approach
- Temporal and spatial distributions
- SIP regulatory frameworks rely on detailed emissions inventories and modeling projections through time

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Non-Fiscal Regulatory Decision Criteria

Cost-Benefit data valuable, but only one factor

- Mandate?
- Existing authority to act or difficulty of securing necessary authority
- Compatibility of option with existing regulatory framework
- Local infrastructure, i.e. necessary rail service, power capacity, proximity to raw materials
- Alignment with other goals and mandates (safety considerations, co-benefits)

Non-Fiscal Regulatory Decision Criteria (continued)

- Business needs of communities involved (example: fuels % cost of operation)
- Willingness of potentially regulated community to participate
- "Fairness" issues
- Ability to pay
- Avoidance of lawsuits
- Enforceability

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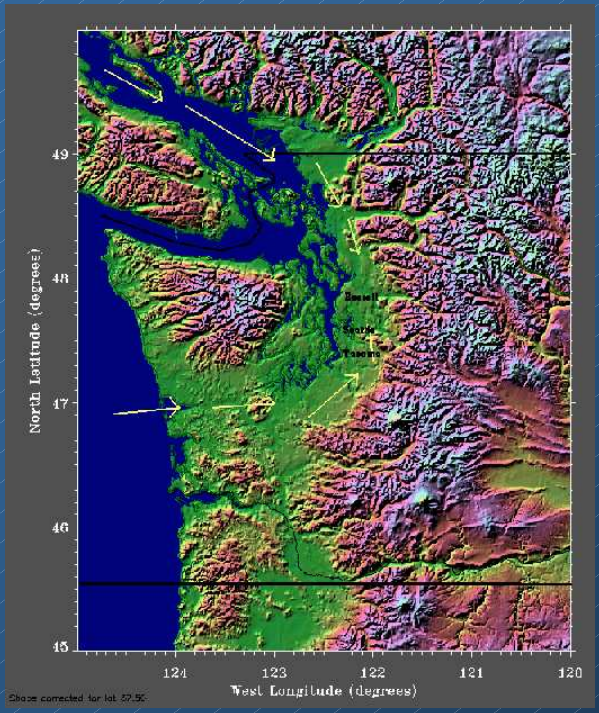
Non-Fiscal Regulatory Decision Criteria

- Treaty considerations
- International competitiveness issues

Air pollution and emission sources do not respect international boundaries.



Non-Fiscal Regulatory Decision Criteria (continued)

- Political climate, impacts, and timing
- Public acceptance and demands
- Ease of implementation
- Leadership and staff experience and preferences
- Media interest and influence
- Relative toxicity of pollutants
- Hot spot verses regional air quality issues

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Strong preference given to air emission control programs that reduce health risks the most and have multi-pollutant benefits

Example - Diesel Solutions Program reduces:

- toxics
- fine particulates
- oxides of nitrogen
- sulfur dioxide
- greenhouse gases

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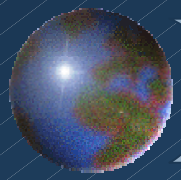
Non-fiscal decision-making factors difficult to "model" …

- Non-fiscal costs and benefits very important, but difficult to quantify
- Good public process and widespread input increases quality of decisions
- Regulatory decisions are ultimately political and made by elected and appointed officials.

Single Pollutant Approach Problems

- Often federal mandates do not align with local needs. (NOx in Puget Sound)
- Single pollutant mandates can cause other air pollutants to increase (oxygenated fuels)
- Single pollutant control strategies can also cause problems with other media (MTBE in ground and surface water)
- Difficult to weigh issues in multi-pollutant approaches



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State and Local Use of cost-benefit Analysis

- Many jurisdictions include some sort of cost-benefit analysis in their rulemaking process.
- State and local agencies often lack the sophisticated staff and modeling tools to perform high quality cost benefit analyses.
- Obtaining reliable data is often difficult especially for small agencies.

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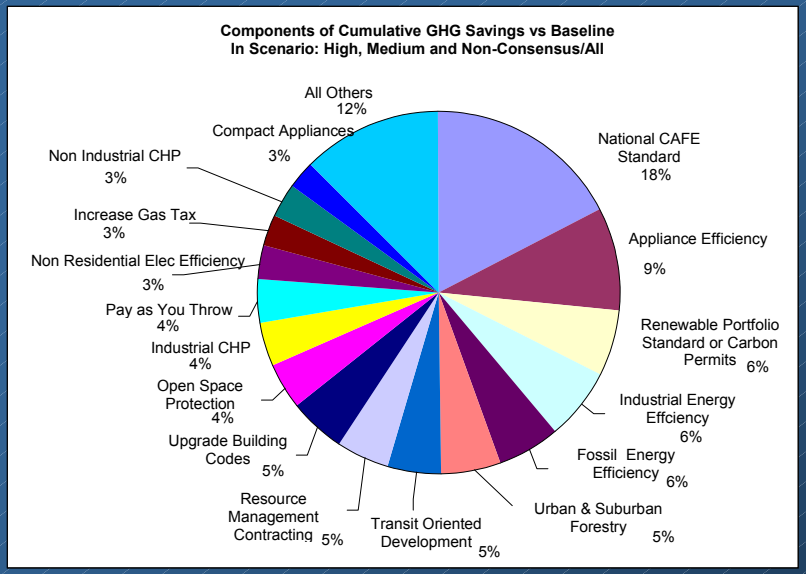
Puget Sound Clean Air Agency Developing Climate Change Program

- Started multi-pollutant cost-benefit analysis modeled on Rhode Island GHG Program
- Valuable tool for guiding choices among wide range of policy options



Source: Rhode Island Greenhouse Gas Policy Scenarios

Prepared for The Rhode Island Greenhouse Gas Policy Stakeholder Group by the Tellus Institute

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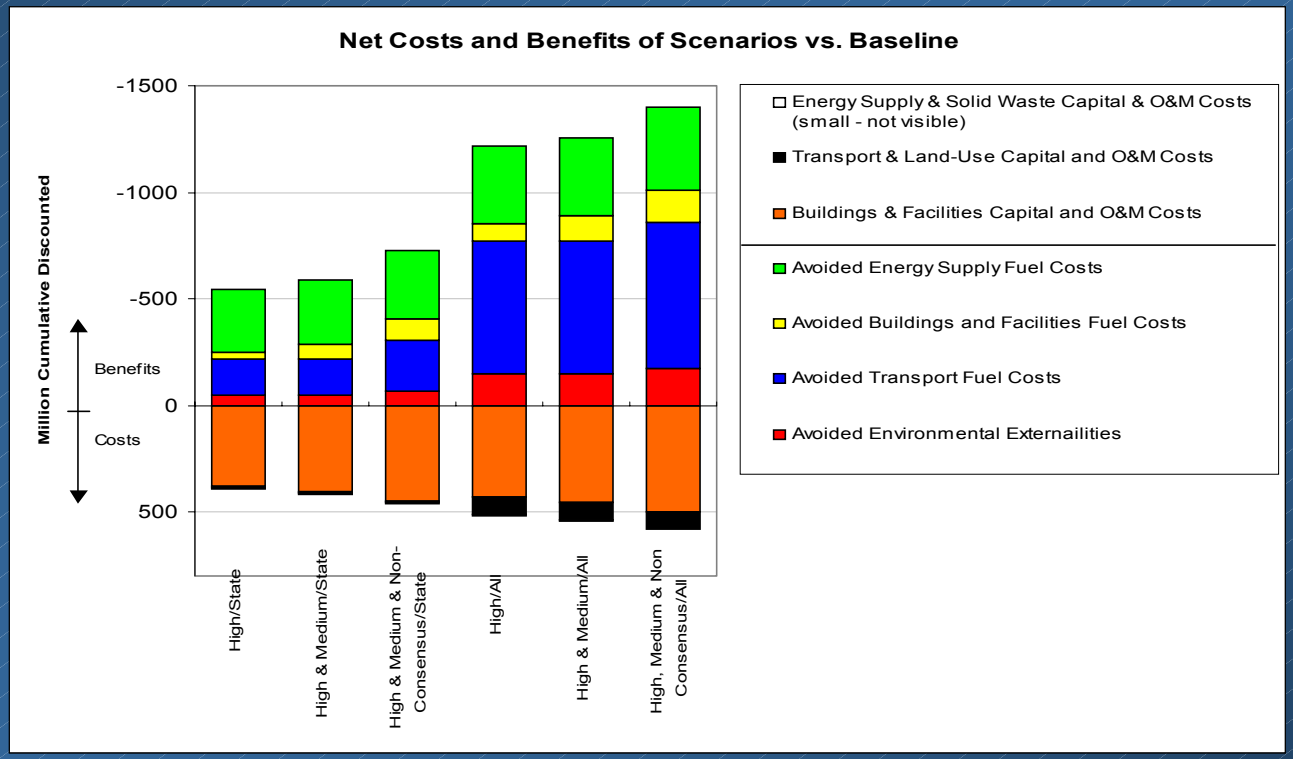
Traditional comparison of costs and benefits of various options …



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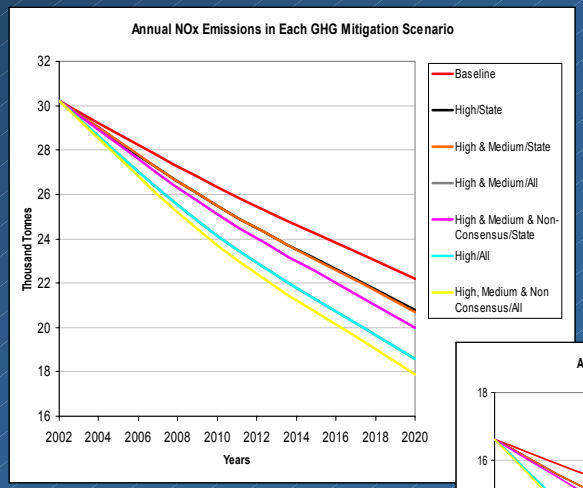
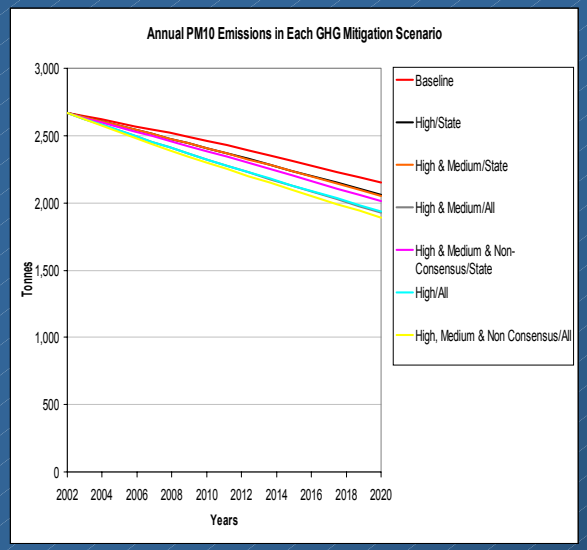
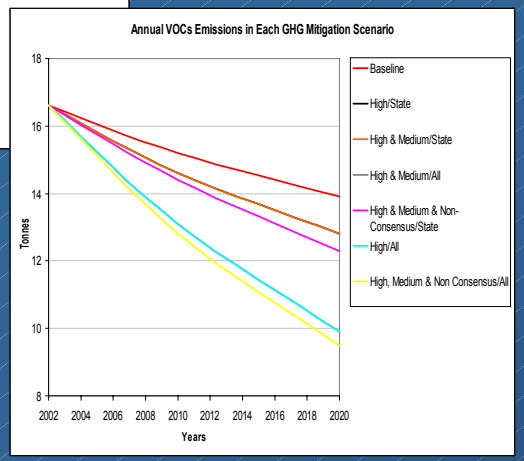
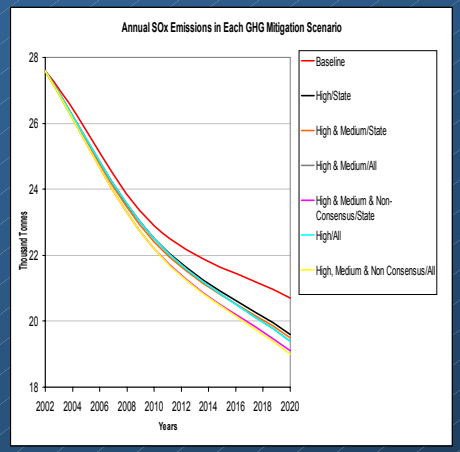
… with a multi-pollutant evaluation of co-benefits









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Conclusions

- Although the very structure of federal environmental laws and funding discourages multi-pollutant decision-making, state and local air agencies are attempting to do so.
- High quality multi-pollutant cost-benefit analysis tools need to be developed.
- The pressures of challenged economies in a climate of ever increasing global competition make wise environmental investments more important than ever.

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